IN THE UNITERQD STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Kenneth E. Welker *et al.*	GROUP ART UNIT: 3663
SERIAL NO.: 10/597,227	CONFIRMATION NO.: 7982
FILED: JULY 17, 2006	EXAMINER: Scott A. Hughes
FOR: Seismic Cable Positioning Using Coupled Inertial System Units	ATTY. DKT. NO.: 2088.003300
	CLIENT DOCKET: 14.0250-PCT-US

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicants request review of the final rejection in the above-identified application. No amendments are being filed with this request. This request is being filed with a Notice of Appeal. The review is requested for the reason(s) set forth below. If an extension of time is required to enable this paper to be timely filed and there is no separate Petition for Extension of Time filed herewith, this paper is to be construed as also constituting a Petition for Extension of Time Under 37 CFR § 1.136(a) for a period sufficient to timely file this document. Should any further fee(s) under 37 C.F.R. §§1.16-1.21 or any other deficiency in fees be required for any reason, the Commissioner is authorized to deduct said fees from Williams, Morgan & Amerson's P.C. Deposit Account No. 50-0786/2088.003300.

I. STATUS OF THE CLAIMS

Claims 1-69 are pending in the case. Each of claims 1-69 was rejected on new grounds as follows: (1) claims 1-5, 7-8,10-19, 21-30, and 32-69 as obvious under 35 U.S.C. 103(a) over U.S. Letters Patent 5,640,325 ("Banbrook *et al.*") in view of U.S. Letters Patent 6,625,083 ("Vandenbroucke"); (2) claim 6 as obvious under 35 U.S.C. 103(a) over Banbrook *et al.* and Vandenbroucke in combination with U.S. Letters Patent 6,011,752 ("Ambs"); and (3) claims 9,

20, and 31 as obvious under 35 U.S.C. 103(a) over Banbrook *et al.* and Vandenbroucke in view of U.S. Letters Patent 5,739,787 ("Burke *et al.*"). Applicant traverses each of these rejections.

II. SUBSTANTIVE ISSUES

Each of the rejections is for obviousness. Each includes the combination of U.S. Letters Patent 5,640,325 ("Banbrook *et al.*") in view of U.S. Letters Patent 6,625,083 ("Vandenbroucke"). All of the rejections are therefore subject to the same legal standards and any defect in the combination of Banbrook *et al.* and Vandenbroucke will afflict all the rejections.

A. THE OFFICE MISCONSTRUES BANBROOK *ET AL.*

The Office misconstrues Banbrook *et al.* as "[disclosing] an apparatus for use in a marine seismic survey (abstract; Column 1)" and "a seismic survey object" (Fig. 1) (Column 3, Line 55 to Column 4, Line 36)." (Office Action dated December 29, 2010, p. 3) This is incorrect. The word "seismic" never appears in Banbrook *et al.* and the Office provides no explanation as to how the disclosed apparatus could ever be considered a seismic survey spread.

Banbrook *et al.* actually discloses something quite different—a passive, towed array SONAR system for use in underwater warfare. The quickest way to determine that Banbrook *et al.* is not a seismic survey is that the vessel towing the array in the illustrated embodiments is a submarine, although the specification states that the a surface ship may also be used. This is apparent from the drawings, which show the vessel to be a submarine from a plan, overhead view and from the description "submarine" used repeatedly. (*see*, *e.g.*, col. 1, lines 57-60, emphasis added) Submarines are not ever used to tow arrays during seismic surveys. Submersible, remotely operated vehicles are sometimes used in deployment and/or retrieval in seabed surveys, but they are not referred to as submarines in the art and they are not used to tow arrays during surveys.

One ground on which the Office rejected this argument is that the word "SONAR" does not appear in Banbrook *et al.*, thereby "undercutting" Applicants argument. As Applicants noted above, the word "seismic" never appears in Banbrook *et al.*, either. But what the Office misses is that these facts mean different things to those skilled in the art. For one thing, Banbrook *et al.* nowhere teaches a source, meaning the towed array is passive—like a passive towed array

SONAR system. Furthermore, as discussed above, Banbrook *et al.* discloses a "submarine" such as is not used in the art.

The Office also discounts this on the basis of s "submarine vessel" disclosed U.S. Letters 5,747,754 ("Svenning et al."). The Office construes this as a "submarine". This is completely contrary to the construction afforded by those skilled in the art. The "submarine vessel" of Svenning et al. is an unmanned remotely operated vehicle ("ROV"), which are well known for deployment of ocean bottom cables in seabed surveys. A "submarine", to the extent known in the art, is a manned submarine and these are not used in seismic surveys. Furthermore, contrary to the Office's construction, Svenning et al. does not teach towing arrays during surveys—only ocean bottom cables in a seabed survey. For which, as Applicants note above, the art employs unmanned ROVs rather than submarines.

B. THE ART OF RECORD FAILS TO TEACH OR SUGGEST ALL THE LIMITATIONS OF THE CLAIMS

As is established immediately above, Banbrook *et al.* does not teach "an apparatus for use in a marine seismic survey" and "a seismic survey object". It therefore follows that it cannot teach "an inertial measurement unit coupled to the seismic survey object" as is recited in the independent claims. Furthermore, there is no allegation of anything regarding "an inertial measurement unit" in Vandenbroucke and Applicants' review has yielded none. Still further, both Banbrook *et al.* and Vandenbroucke present their approaches as full solutions to the problems they address. That is, there is no concession of any drawback or limitation on the efficacy of the technique in addressing that problem. So not only is there no teaching of the subject limitations, there is no teaching that might suggest such a limitation. The combination of Banbrook *et al.* and Vandenbroucke therefore neither teaches nor suggests all the limitations of the claims.

C. BANBROOK ET AL. IS OUTSIDE THE SCOPE & CONTENT OF THE PRIOR ART

It is the Office's burden to establish that the references are within the scope and content of the prior art. *In re Oetiker*, 24 U.S.P.Q.2d (BNA) 1443, 1445-46 (Fed. Cir. 1992). A reference can be asserted against the claimed invention under §103 only if (1) it is within Applicant's field of endeavor, or (2) is reasonably pertinent to the problem facing Applicant even

though not within Applicant's field of endeavor. *In re Clay*, 23 U.S.P.Q.2d (BNA) 1058, 1060 (Fed. Cir. 1992).

Banbrook *et al.* is clearly not within Applicants' field of endeavor. The Office's position to the contrary is based on the misconstructions of Banbrook et al. and Svenning et al. discussed above. That leaves, then, the question of whether Banbrook *et al.* is "reasonably pertinent". The use of passive—or even active—towed array SONAR systems for use in underwater warfare operate significantly differently and under significantly different constraints relative to marine seismic surveys. Sonar systems such as those disclosed in Banbrook *et al.* are used to detect and track moving objects in the water column that are relatively close to the vessel. A seismic survey, on the other hand, does not track anything, is not interested in moving objects, considers any information from the water column to be noise, and is interested in geologic formations typically at great distance from the vessel. Factors such as these affect all manner of design and operational considerations for the respective towed-arrays, and these differences evidence the distinctiveness of these two fields of endeavor. *See Clay*, 23 U.S.P.Q.2d (BNA) at 1060-61; *In re Horn*, 203 U.S.P.Q. (BNA) 969, 971 (C.C.P.A. 1979). They furthermore establish the fact that those ordinarily skilled in the art would not turn to the art of SONAR systems.

D. BANBROOK ET AL. & VANDENBROUCKE ARE IMPROPERLY COMBINED

It is the Office's burden to establish that the references are combinable. A number of these errors arise from those already discussed above. For example, Banbrook *et al.* does not teach anything regarding a "seismic survey" or a "seismic survey object" as is assumed by this reasoning. Banbrook *et al.* is outside the scope and content of the prior art, and so its teachings become apparent only in the hindsight of Applicants' disclosure. Furthermore, although both references teach the use of hydrophones, it is evident to those skilled in the art that different frequencies are used in SONAR than in seismic survey and so the inference that the two use the "same" sensors is not supported in the record.

But most significant among these errors is that the Office's reasoning does not find any basis in the evidence of record. The Office alleges that the motivation is "...so that the positions will be known for processing the data acquired". However, both Banbrook *et al.* and Vandenbrouke already affirmatively state that their respective techniques already provide this benefit. The record therefore establishes that not only was such position determination already known, there were at least

two different, alternative techniques for doing it, both of which are presented as full solutions. Indeed, the only teaching or suggestion in the record that IMU-based and USBL-based techniques might be improved upon in any way, much less through combination, is in Applicants' disclosure. This is the very definition of "hindsight".

E. THERE IS NO REASONABLE EXPECTATION OF SUCCESS IN THE ASSSERTED COMBINATION

The art of record must establish a reasonable probability of success arising therefrom. Both Banbrook *et al.* and Vandenbrouke already affirmatively state that their respective technique provide position determination and represents their technique as complete. Neither Banbrook *et al.* nor Vandenbroucke suggests any deficiencies that might be cured by combining their technique with another. Thus, even ignoring the other deficiencies in the *prima facie* case, the only thing that one skilled in the art would expect from combining the two techniques is an unnecessary and undesirably complex, expensive, duplication of effort. This is not a "reasonable expectation of success", and so the combination fails to render obvious any claim.

III. CONCLUDING REMARKS

Applicants respectfully submit that the claims are in condition for allowance, and request that they be allowed to issue. The Examiner is invited to contact the undersigned attorney at (713) 934-4053 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

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